



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER OF PATENTS AND TRADEMARKS  
Washington, D.C. 20231  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/322,472	05/28/1999	JOYDIP KUNDU	ORA99-04(OID)	8046

21005 7590 02/12/2003

HAMILTON, BROOK, SMITH & REYNOLDS, P.C.  
530 VIRGINIA ROAD  
P.O. BOX 9133  
CONCORD, MA 01742-9133

EXAMINER

VAUGHN JR, WILLIAM C

ART UNIT	PAPER NUMBER
----------	--------------

2142

DATE MAILED: 02/12/2003

9

Please find below and/or attached an Office communication concerning this application or proceeding.

8

**Office Action Summary**

Application No.

09/322,472

Applicant(s)

KUNDU ET AL. *sa*

Examiner

William C. Vaughn, Jr.

Art Unit

2142

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 26 November 2002.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-52 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-52 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

Art Unit: 2142

### DETAILED ACTION

1. This Action is in response to the Amendment received on 26 November 2002.
2. Amendment A, Paper #8, received 26 November 2002 has been entered into record.

### *Response to Arguments*

3. Applicant's arguments and amendments filed on 26 November 2002 have been carefully considered but they are not deemed fully persuasive. Applicant's arguments are deemed moot in view of the following new grounds of rejection as explained here below, necessitated by Applicant's substantial amendment to the claims (i.e., *by sending a proposed change to the shared repository; and in response...change.*) which significantly affected the scope thereof.
4. The application has been examined. **Claims 1-52** are pending. The objections and rejections cited are as stated below:

### *Claim Rejections - 35 USC § 102*

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

Art Unit: 2142

6. Claims 1, 7-9, and 11-13 and 14-52 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,092,213 to Lennie.

7. Regarding Claim 1, Lennie teaches a method for maintaining a cluster definition [column 2, lines 36-40] for a network cluster having at least one member node [interconnected nodes, column 2, line 38], the method comprising: coupling the at least one member node to a shareable repository [column 4, lines 18-19]; storing a cluster definition for the network cluster in the shareable repository [column 4, lines 28-32]; selecting a coordinator node from the at least one member node of the network cluster [column 2, 47-48]; a member node requesting a change to the cluster definition [column 2, lines 48-50]; and the coordinator node updating the cluster definition to reflect the requested change [column 2, lines 65-67].

8. Regarding claim 7, Lennie teaches the invention substantially as claimed as noted above. Lennie further teaches comprising: recovering from a failure of the coordinating node [column 3, lines 10-14].

9. Regarding claim 8, Lennie teaches the invention substantially as claimed as noted above. Lennie further teaches wherein recovering includes: selecting a new coordinator node from the member nodes of the network cluster [column 3, lines 10-14], completing, by the new coordinator node, an update of the cluster definition to reflect the requested change if there is a set valid bit and an incomplete log file [column 6, lines 3-6] in the shareable repository [column 4, lines 14-18].

10. Regarding claim 9, Lennie teaches the invention substantially as claimed as noted above. Lennie further teaches wherein completing an update includes: reading the incomplete log file [column 6, lines 13-15]; and continuing the update of the cluster definition from a point, as

Art Unit: 2142

indicated by the incomplete log file [column 3, lines 14-18 & lines 38-40], where the coordinating node ceases updating the cluster definition due to the failure of the coordinating node.

11. Regarding claim 11, Lennie teaches the invention substantially as claimed as noted above. Lennie further teaches an apparatus for updating a cluster definition for a network cluster having at least one member node, comprising: a shareable repository coupled to the at least one member node of the cluster [column 4, lines 18-19], the repository including the cluster definition [column 2, lines 45-46] and a proposed change to the cluster definition [column 2, lines 55-57]; and a coordinator node, selected from the at least one member node of the network cluster, to update the cluster definition with the proposed change [column 2, lines 47-51].

12. Regarding claim 12, Lennie teaches the invention substantially as claimed as noted above. Lennie teaches: a log file, indicating a progress of updating the cluster definition [master audit log column 3, lines 38-40].

13. **Claim 13** is a product or manufacture claim corresponding to the apparatus claim 11; therefore claim 13 is rejected under the same rationale.

14. **Claims 14-22** list all the same elements of **claims 1-12**, but in computer program product form rather than method form. Therefore, the supporting rationale of the rejection to **claims 1-12** applies equally as well to **claims 14-22**.

15. **Claims 23-31** are substantially the same as **claims 1-22** and are thus rejected for reasons similar to those in rejecting **claims 1-22**.

Art Unit: 2142

16. **Claim 32** list all the same elements of claim 1, but in system form rather than method form. Therefore, the supporting rationale of the rejection to claim 1 applies equally as well to claim 32.
17. **Claims 33-40** are substantially the same as claims 1-31 and are thus rejected for reasons similar to those in rejecting claims 1-31.
18. **Claims 41-45** list the same elements of claims 33-40, but in apparatus form rather than method form. Therefore, the supporting rationale of the rejection to claims 33-40 applies equally as well to claims 41-45.
19. **Claims 46-49** list the same elements of claims 33-40, but in computer program product form rather than method form. Therefore, the supporting rationale of the rejection to claims 33-40 applies equally as well to claims 46-49.
20. **Claims 50-52** are substantially the same as claims 1, 11, 32, 33 and are thus rejected for reasons similar to those in rejecting claims 1, 11, 32 and 33.

***Claim Rejections - 35 USC § 103***

21. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

22. Claims 2, 3, and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,092,213 to Lennie and further in view of U.S. Patent No. 6,014,669 to Slaughter.

Art Unit: 2142

23. Regarding claim 2, Lennie teaches the invention substantially as claimed as noted above.

Lennie does not teach wherein requesting a change to the cluster definition includes: sending a proposed change to a scratch area; and setting a valid bit associated with the scratch area.

However, in art related to cluster configurations, Slaughter teaches local consistency records within the cluster configuration database of each member node [Slaughter column 10, lines 64] to corresponding to a scratch area and a flag used to indicate the database has been restored [Slaughter column 10, lines 16-17] corresponding to the valid bit. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Lennie with the teachings of Slaughter to achieve a scratch area and associated valid bit because they certify that the local cluster configuration of each member node is not corrupt.

24. Regarding claim 10, Lennie and Slaughter teach the invention substantially as claimed as noted above. Lennie and Slaughter further teach the step of: re-requesting, by the member node, the change to the cluster definition if after a period of time, the change is not made to the cluster definition.

25. Regarding claim 3, Lennie and Slaughter teach the invention substantially as claimed as noted above. Lennie and Slaughter further teach wherein updating the cluster definition includes: verifying the valid bit [Slaughter checks validity column 10, lines 41-43] ; setting an update flag [Slaughter col. 6, lines 21-26 & col. 12, lines 10-11]; modifying the cluster definition to reflect the requested change [Slaughter col. 9, lines 25-27]; logging a progress of modifying the cluster definition in a log file in parallel with modifying the cluster definition [Lennie column 3, lines 2-7]; incrementing a version number associated with the shareable repository [Slaughter column 9, lines 27-29]; and clearing the valid bit and the update flag [column 12, lines 21-23 remove

Art Unit: 2142

update and restore command correspond to operations performed on the synchronization command of which a flag may be set as indicia].

***Claim Rejections - 35 USC § 103***

26. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lennie and Slaughter as applied to claim 3 above, and further in view of U.S. Patent No. 6,003,075 to Arendt.

27. Regarding claim 4, Lennie and Slaughter teach the invention substantially as claimed as noted above. Lennie and Slaughter do not teach wherein modifying the cluster definition includes: copying the proposed change from the scratch area to the cluster definition. However Arendt teaches copying configurations in to a staging area and copied into the active configuration of active nodes [Arendt column 2, lines 26-31]. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Lennie, Slaughter with the staging area of Arendt because it enhances the integrity of the configurations by implementing versioning prior to committing changes.

***Claim Rejections - 35 USC § 103***

28. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,092,213 to Lennie and further in view of U.S. Patent No. 5,964,886 to Slaughter.

29. Regarding claim 5, Lennie teaches the invention substantially as claimed as noted above. Lennie does not teach comprising: requesting, by a potential member node, membership in the network cluster; and accessing, by the potential member node, the cluster definition. However, in art related to cluster configurations, Slaughter teaches membership changes including a node joining a cluster and [Slaughter column 8, lines 46-47] and each node of a



cluster accessing the storage device of the cluster [Slaughter Abstract lines 1-3) corresponding to a request for membership and accessing the cluster definition by a potential member node.

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Lennie with the teachings of Slaughter to achieve request to join and access by a potential member node because it allows nodes to be added to a cluster without suspension in operation.

***Claim Rejections - 35 USC § 103***

30. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,092,213 to Lennie and U.S. Patent No. 5,964,886 to Slaughter as applied to claim 5 and further in view of U.S. Patent No. 6,243, 702 to Bamford.

31. Regarding claim 6, Lennie and Slaughter teach the invention substantially as claimed as noted above. Lennie and Slaughter further teach wherein accessing the cluster definition includes: determining a version number of the shared repository to yield a first version number [Slaughter column 8, lines 48-49]; reading the cluster definition [Slaughter column 9, lines 9-12]; re-determining a version number of the shared repository to yield a second version number [Slaughter re-configuration number column 11, lines 34-36]; comparing the first version number with the second version number [Slaughter column 11, lines 37-39]; and Lennie and Slaughter do not teach repeating the step of accessing the cluster definition until the first version number equals the second version number. However, in art related to multi-version databases, Bamford teaches a logical timestamp as version number [column 1, line 32-34]. Bamford further discloses synchronizing the logical clocks of database servers on a periodic basis [column 2, lines 59-65 & column 3, lines 37-38] corresponding to repeating the step of

Art Unit: 2142

accessing the cluster definition until the first version number equals the second version number. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Lennie and Slaughter with the teachings of Bamford to achieve equal version numbers because it would minimize propagation delays.

### *Response to Arguments*

32. Applicant's arguments filed on 26 November 2002, have been carefully considered but they are not deemed fully persuasive. However, because there exists the likelihood of future presentation of this argument, the Examiner thinks that it is prudent to address applicants' main points of contention.

a. Applicant contends that Lennie neither discloses nor suggests storing a cluster definition in the shared repository; a member node requesting a change to the cluster definition by sending a proposed change to the shared repository; and updating, from the coordinator node, the cluster definition stored in the shared repository to reflect the requested change.

2. With regards to "Point A", it is the Examiner's position that Lennie does store configuration data in a consistent database [see Lennie, Col. 2, lines 35-44]. Lennie also teaches nodes receive request regarding changes in configuration [see Lennie, Col. 2, lines 48-51]. Lennie also states that each node is communicatively coupled to each other as well as to storage elements [see Lennie, Col. 4, lines 17-65]. It is the Examiner's interpretation that each system has access to each of the storage elements (shared repository). Lennie also teaches updating the consistent databases of the nodes [see Lennie, Col. 5, lines 47-64].

*Conclusion*

3. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to William C. Vaughn, Jr. whose telephone number is (703) 306-9129. The examiner can normally be reached on 8:00-5:00, 1st Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Powell can be reached on (703) 305-9703. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 746-7239 for regular communications and (703) 746-7238 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-9700.

Application/Control Number: 09/322,472

Page 11

Art Unit: 2142

WCV

WCV

Patent Examiner

Art Unit 2142

February 10, 2003

KENNETH R. COULTER  
PRIMARY EXAMINER  
*Kenneth R. Coulter*